

WHAT IS CLAIMED IS:

1. An illumination optical system for illuminating an illumination area on an illumination surface based on a light from a light source, comprising:

a wavefront dividing type optical integrator which is arranged in an optical path between the light source and the illumination surface and forms a plurality of light source images; and

a light source image enlarging member which is arranged in an optical path between the light source and the optical integrator at or near a position optically conjugate with the illumination surface, the light source image enlarging member enlarging the light source images,

wherein the illumination area has a slot shape with a first dimension and a second dimension which is perpendicular to the first dimension, and

wherein the light source image enlarging member stretches the light source images along the first direction corresponding to the first dimension.